

Listing of Claims

Claims 1 (withdrawn)

A method of obtaining sequences which bind to the surface of a bacterial spore comprising the steps of:

- (a) mixing phage from a Phage Display library with spores;
- (b) incubating the product of step (a) for sufficient time to allow the phage to complex with the spores;
- (c) centrifuging the product of step (b) to obtain the phage-spore complexes;
- (d) washing the phage-spore complexes repeatedly;
- (e) eluting the phage from the phage-spore complexes with elution buffer;
- (f) neutralizing the eluate,
- (g) amplifying the eluted phage,
- (h) repeating the above steps to perform 3 to 4 rounds of biopanning;
- (i) purifying individual clones;
- (j) amplifying purified clones, then extracting genomic DNA from each preparation to determine the DNA sequence encoding peptides; and
- (k) subjecting the peptides indicated by the DNA sequence to binding studies to determine ability of the peptides to bind to the target spores.

Claim 2 (withdrawn)

A peptide which binds to B. subtilis chosen from peptides of

5-12 amino acids containing the sequence Asn-His-Phe-Leu (Seq. ID No. 1).

Claim 3 (withdrawn)

A peptide of claim 2 containing the sequence Asn-His-Phe-Leu-Pro (Seq. ID No. 39).

Claim 4 (withdrawn)

A peptide which binds to B. anthracis chosen from peptides of the sequences Thr-Ser-Glu-Asn-Val-Arg-Thr (TSQNVRT) (Seq. ID No. 40) or a sequence of the general formula Thr-Tyr-Pro-X-Pro-X-Arg (TYPXPXR) wherein X is a Ile, Val or Leu.

Claim 5 (withdrawn)

A peptide of claim 4 having the sequence TSQNVRT.

Claim 6 (withdrawn)

A peptide of claim 4 having the general formula Thr-Tyr-Pro-X-Pro-X-Arg (TYPXPXR) wherein X is a Ile, Val or Leu.

Claim 7 (withdrawn)

A peptide of claim 6 wherein, in both instances, X is Ile.

Claim 8 (withdrawn)

A peptide of claim 6 wherein, in at least one instance, X is Val.

Claim 9 (withdrawn)

A peptide which binds to B. cereus chose from peptides having the sequence Val-Thr-Ser-Arg-Gly-Asn-Val (VTSRGNV) (Seq. ID No. 100) and Ser-Pro-Leu-X₁-X₂-His wherein X₁ is His or Arg and

X₂ is Arg or Lys (SPLX₁X₂H).

Claim 10 (previously canceled)

Claim 11 (amended)

A The composition of claim 22 wherein the solid support is a polymeric support.

Claim 12 (amended)

A The composition of claim 22 wherein the solid support forms a filter.

Claim 13 (previously amended)

A The composition of claim 22 wherein the solid support is a tape or sponge.

Claim 14 (withdrawn)

A method of claim 1 wherein the spores used in step (a) are B. subtilis, B. anthracis, or B. cereus spores.

Claim 15 (previously canceled)

Claim 16 (withdrawn)

A method of identifying spores of particular species of bacteria comprising:

- 1) exposing the sample of material suspected of containing said spores to peptide ligands known to bind to spores of said species of bacteria under conditions which will provide evidence of the binding of said ligands to said spores, then
- 2) observing said sample for evidence of binding of said ligands to said spores.

Claim 17 (withdrawn)

A method of claim 16 wherein the peptide ligands bind to spores of B. subtilis, B. anthracis or B. cereus.

Claim 18 (previously amended)

A ~~The~~ composition of claim 27 wherein the peptide ligand is in a liquid medium.

Claim 19 (withdrawn)

A method of claim 16 wherein the peptide ligand has been attached to a tag.

Claim 20 (withdrawn)

A method of claim 19 wherein the tag is a fluorescent, phosphorescent or radioactive tag.

Claim 21 (previously canceled)

Claim 22 (previously amended)

The composition of claim 27 containing a tagged peptide ligand which binds with specificity to the surface of a B. anthracis spore, said ligand being bound to a solid support.

Claim 23 (withdrawn)

The composition of claim 27 wherein the tagged peptide of 5-12 mers binds to a B. anthracis spore, said peptide containing either the sequence Thr-Ser-Gln-Asn-Val-Arg-Thr (TSQNVRT) (Seq. ID No. 40) or a sequence of the general formula Thr-Tyr-Pro-X-Pro-X-Arg (TYPXPXR), wherein X is Ile, Val or Leu.

Claim 24 (previously presented)

The composition of claim 23 wherein the tagged peptide of 5-12 mers contains the sequence Thr-Ser-Gln-Asn-Val-Arg-Thr (TSQNVRT) (Seq. ID No. 40).

Claim 25 (withdrawn)

The composition of claim 23 wherein the tagged peptide of 5-12 mers contains at least one sequence chosen from among Thr-Tyr-Pro-Ile-Pro-Ile-Arg (TYPIPIR) (Seq. ID No. 41), Thr-Tyr-Pro-Ile-Pro-Phe-Arg (TYPIPER) (Seq. ID No. 42), and Thr-Tyr-Pro-Val-Pro-His-Arg (TYPVPHR) (Seq. ID No. 43).

Claim 26 (previously presented)

The composition of claim 23 wherein the peptide ligand is in a liquid medium.

Claim 27 (previously presented)

A composition comprising a tagged purified peptide ligand of 5-12 mers known to bind to spores from B. anthracis and a sample suspected of containing spores which will bind to said peptide ligand.